10

Optional Paper
Computer Science
Paper - I

3 Hours

Maximum Marks: 200

## IMPORTANT NOTES / महत्वपूर्ण निर्देश

Please fill up the OMR Sheet of this Question Answer Booklet properly before answering. Please also see the directions printed on the obverse before filling it.

प्रश्नोत्तार पुरितका में प्रश्न हल करने से पूर्व उसके संलग्न ओ.एम.आर. पत्रक को भली प्रकार भर लें । एरो भरने रेहु उसके पृष्ठ भाग पर मुद्रित निर्देशों का अध्ययन कर लें ।

The question paper has been divided into three Parts - A, B and C. The number of questions to be attempted and their marks are indicated in each part.

प्रश्न-पन्न था, य और रा तीन भागों में विभाजित है । प्रत्येक भाग में से किये जाने वाले प्रश्नों की संख्या और उनके अंक उस भाग में अंकित किये गये हैं ।

Attempt answers in English. उसर अंग्रेजी भाषा में से दीजिये ।

Answers to all the questions of each part should be written continuously in the script and should not be mixed with those of other parts. In the event of candidate writing answers to a question in a part different to the one to which the question belongs, the question will not be assessed by the examiner.

एतर पुरिस्था में प्रस्थेक भाग के समस्त प्रश्नों के उत्तर क्रमवार देने चाहिये तथा एक भाग में दूसरे भाग के प्रश्न के उत्तर लिखे जाने पर ऐसे प्रश्न को जाँचा गर्छी जा सकता हैं।

The candidates should not write the answers beyond the limit of words prescribed in parts A, B and C fulling this the marks can be deducted.

अपनी प्रियों भी भाग अ, व और स में अपने उत्तर निर्धारित शब्दों की सीमा से अधिक नहीं लिखने चाहिये। हराया प्रस्तिय करने पर अंक काटे जा सकते हैं ।

In case the candidate makes any identification mark i.e. Roll No./Name/Telephone No./Mobile No. or any other marking either outside or inside the answer book, it would be treated as resorting to using unfair means. In such a case his candidature shall be rejected for the entire examination by the Commission.

अभाषी द्वारा उत्तर पुरितका के अंदर अथवा बाहर पहचान चिन्ह यथा - रोल नम्बर / नाम / मोवाईल नम्बर / टेलीफोन पान्तर लिये जाने या अन्य कोई निशान इत्यादि अंकित किये जाने को अनुचित साधन मान जायेगा। आयोग तहा ऐसा पाये जाने पर अभ्यर्थी की सम्पूर्ण परीक्षा में अभ्यर्थिता रदद कर दी जायेगी ।

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Note: Attempt all the twenty questions. Each question carries 2 marks. Answer should not exceed 15 words.

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What is complete binary				•
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Let P and q denote positive integers. Suppose a function F is defined recurssively as

$$F(P,q) = \begin{cases} 0 \\ F(p-q,q) + 1 \end{cases}$$

P < q

$$q \leq P$$

then find F(11,3)?

What is the concept of devide and conquer algorithm?

- What are structured analysis tools?
- 10-I/KH-1024] [Contd... - LTEAND THOU ÜBEN TEENET EEN LENGTHOUG OOK TOU GOBEN FROUK DOOG TOUGHTEND HEET

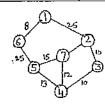
Let a complete undirected graph G have n vertices. Find the number of edges in a vertex complete graph?

Suppose a weighted graph G is maintained in memory by a node array DATA and a weighted matrix W as follows:

DATA=X,Y,S,T

$$W = \begin{pmatrix} 0 & 0 & 3 & 0 \\ 5 & 0 & 1 & 7 \\ 2 & 0 & 0 & 4 \\ 0 & 6 & 8 & 0 \end{pmatrix}. \text{ Draw a picture of G.}$$

Draw minimum cost spanning tree for the above graph.



10 What is meant by cohesion and coupling?	13 What is the output of following main()
	unsigned int y=12;
	printf("x is greater"); else printf("y is greater");
	return0;
11 What is vector generation? what are its algorithms?	
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12 Describe the use of halftoning?	14 Give diagram for different states of a process in a mult
10-1/KH-1024) 6 [O	Contd   10 - I / KH-1024] 7

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	20 Describe the use of gets() function in C?
	20 Describe the use of gets() function in C?
7 Explain ternary operator with example?	
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	19 What is lexical analysis?
6 What is the fullform of DDR SDRAM?	
15 Give the concept of thread?	Write down the interpretation for following machine instruction.  A 1,901(2,14)

23 What are the objectives of software testing?

Note	Attempt all the twelve questions. Each question carries 5 marks. Answer should not exceed 50 words.
21	Translate following infix expression into its equivalent postfix expression. A / (B * D ) /E-F * (G + H / $K$ )
22	Write algorithm of traversing a linear array?
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24 Give data flow diagram symbols ? Explain briefly with example. [Contd... 11 10-1/KH-1024]

25	Wha follo	at is homogeneo owing.	us coordinate s	ystem? Give hor	mogeneous co-ordinat	tes matrix for	; <b>27</b>	What is deadlock? What are its r	ecessary conditions?	
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							20	Using Number system convert foll	owing ?	
26	Expl	lain flat panel di	splay. What are	its types? Exp.	lain briefly.		28		(ii) (237.04)	o=(?)
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29	Conside	er the fo	ollowing	snapsho	ot of a	system.					31	What is	meant	by exception	handling? What at	e the basics of exc	ception handling?
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Note	e :	Attempt any 5 questions. Each question carries 20 marks. Answer should not exceed 200 words.			
33	(i) (ii)	Write down an algorithm for binary search.  Write a program in C language for binary search.			
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(ii) Explain depth buffer n	nethod.		- 1/ 1/ 1/ 1/		*	
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What is the total head movement (a) FCFS (b) SSTF	for the following Disk scheduling (c) C-SCAN	g schemes:			
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37	Explain spiral model of software engineering	with diagram?	:		

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